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Docket No.: 4590-372

Application No.: 10/523,003**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-3 (canceled).

4. (new) An antenna for a sonar with synthetic antenna processing, comprising:  
a plurality of spaced out sensors distributed in a main zone in which the sensors are spaced out by a pitch  $d$  and at least in one zone located at one end of the antenna in which the sensors are spaced out by a pitch  $d'$  smaller than pitch  $d$ , said pitch  $d$  being defined so as to obtain the desired level of the grating lobe in the directivity pattern of a channel and said pitch  $d'$  being defined so as to obtain the desired precision for the self-calibration of the antenna, said self-calibration being made by the means of an inter-recurrences correlation.

5. (new) The antenna according to claim 4, in which the pitch  $d$  between sensors is reduced to  $d'$  at both end zones of the antenna with regard to said main zone.

6. (new) The antenna according to claim 4, in which the pitch  $d$  between sensors is reduced to  $d'$  at only one end zone of the antenna with regard to said main zone.

7. (new) The antenna according to claim 4, in which the pitch  $d$  is defined by the following formula:

$$d \approx 0.7 \cdot \lambda / \Delta \theta$$

in which  $\lambda$  represents the wavelength of the signal and  $\theta$  the bearing width of the transmission sector.

8. (new) The antenna according to claim 7, in which the pitch  $d'$  is determined so

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that the report  $d/d'$  is at least greater than 1.5.

9. (new) The antenna according to claim 8, in which the pitch  $d$  between sensors is reduced to  $d'$  at both end zones of the antenna with regard to said main zone.

10. (new) The antenna according to claim 8, in which the pitch  $d$  between sensors is reduced to  $d'$  at only one end zone of the antenna with regard to said main zone.